

Abstract of the Disclosure

Many integrated circuits include a type of transistor known as a bipolar junction transistor, which has an emitter contact formed of polysilicon.

Unfortunately, polysilicon has a relatively high electrical resistance that poses an

5 obstacle to improving switching speed and current gain of bipolar transistors.

Current fabrication techniques involve high temperature procedures that melt desirable low-resistance substitutes, such as aluminum, during fabrication.

Accordingly, one embodiment of the invention provides an emitter contact structure that includes a polysilicon-carbide layer and a low-resistance aluminum, gold, or

10 silver member to reduce emitter resistance. Moreover, to overcome manufacturing difficulties, the inventors employ a metal-substitution technique, which entails formation of a polysilicon emitter, and then substitution of metal for the polysilicon.

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